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 WO A 8103616
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 A5R

- (71) Applicants
 Oximetrix Inc.,
 (USA-California),
 1212 Terra Bella Avenue,
 Mountain View,
 California 94043,
 United States of America.
 (72) Inventors
 Robert Wayne Beard
 (74) Agents
 Abel and Imray,
 Northumberland House,
 303-306 High Holborn,
 WC1V 7LH.

(54) Medical device for localized therapy

(57) A device for localized diathermy which also includes the potential for simultaneous localized radiation therapy. The device includes tubular element 3 of electrically conductive material in the form of a woven braid. An electrical insulator S is positioned adjacent and abutting the element 3 such that the diathermy treatment associated with electrical current passing through the element 3 is localized to that portion of the element which is uninsulated. Preferably at least one radioactive isotope 7 is positioned within the uninsulated portion of the element such that both the diathermy and the radiation are simultaneously localized.

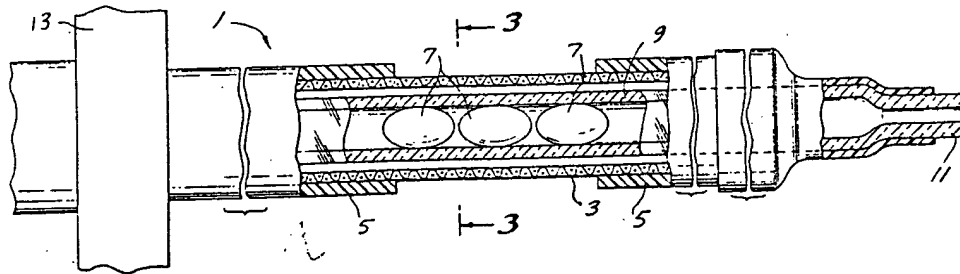


FIG. 2

GB 2 105 201 A

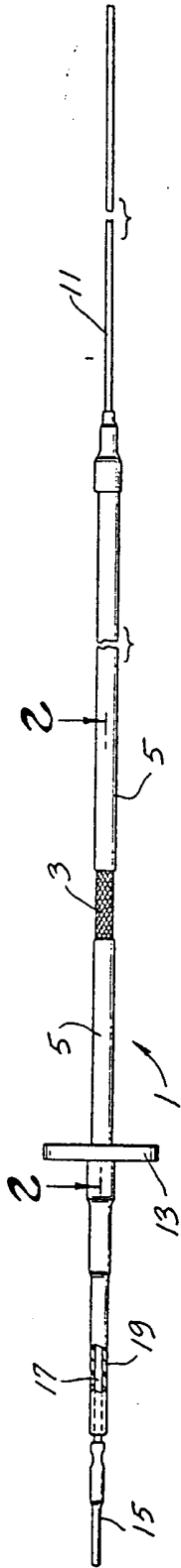


FIG. 1

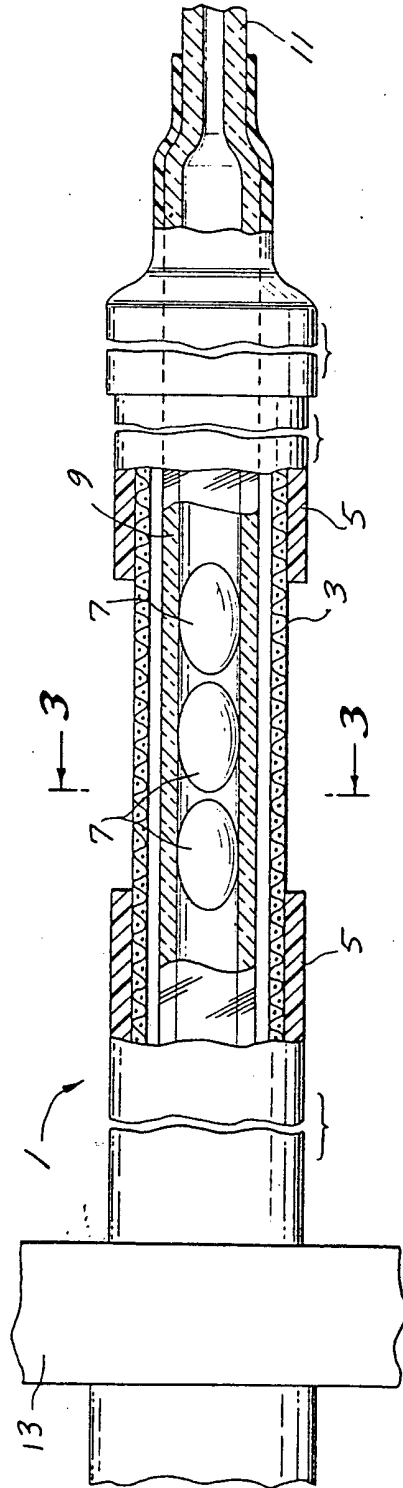


FIG. 2

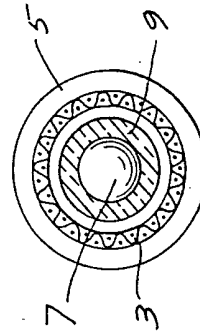


FIG. 3

SPECIFICATION

Medical device for localised therapy

5 This invention relates to a device for medical therapy. More specifically, the device relates to the therapy of malignant tumors.

In the past, it has been realized that it is desirable to treat tumors by radiation from radioactive isotopes.

10 Similarly, it has been understood that tumors may be beneficially treated by diathermy.

The invention related to a device which can provide for localized diathermy and simultaneous localized radiation therapy. The device includes an annulus

15 formed of an electrical conductor which is electrically connected to a suitable conductor for the application of electrical current. The electrical conductor annulus has a plurality of apertures extending radially there-through. Electrical insulation means is positioned

20 adjacent and abutting a portion of the electrical conductor annulus which is uninsulated and which contains at least one radioactive isotope for radiation treatment of the localized area which also receives diathermy treatment.

25 *Figure 1* is a side elevation of the present invention.

Figure 2 is an enlarged fragmentary cross-sectional view taken about 2-2 of *Figure 1*.

Figure 3 is a cross-sectional view taken about 3-3 of *Figure 3*.

30 Referring to *Figure 1*, a device for localized diathermy and simultaneous localized radiation therapy treatment, generally referred to as 1, as shown. The device 1 includes an annulus formed of an electrical extending radially outward from the annulus 3. An

35 electrical insulator 5 is positioned adjacent and abutting such electrical conductor annulus 3. In a preferred embodiment the electrical conductor annulus 3 extends beyond the uninsulated portion. The electrical conductor annulus 3 is adapted to provide diathermy

40 treatment through the uninsulated portion of the annulus 3 by means of connection to an electrical conductor 17 and an electrical contact 15, adapted for application of radio frequency current, the electrical conductor 17 being insulated by electrical insulator

45 19.

In a preferred embodiment a plurality of radioactive isotopes 7 are provided within a sleeve 9 at the uninsulated portion of the annulus 3.

50 Preferably, the device is positioned adjacent a tumor to receive therapy by passing a reduced diameter portion 11 of sleeve 9 into a hollow rod which is then passed through the body of the patient to receive therapy until the uninsulated portion of the annulus 3 is adjacent the tumor. Stop means 13 prevents the device from being pulled through the area to receive treatment. Preferably, the annulus 3 of a material which conducts electrical current is fabricated of a stainless steel braid, the sleeve 9 is formed of nylon tubing and the electrical insulator 5 is formed from polyethylene.

60 While illustrative forms of the apparatus and method in accordance with this invention have been described and shown herein, it is understood that numerous changes might be made without departing from the general purposes and scope of this inven-

tion.

CLAIMS

- 70 1. A device for localised diathermy comprising: an annulus formed of an electrical conductor having a plurality of apertures extending radially through said electrical conductor; and electrical insulation means positioned adjacent and abutting said electrical conductor annulus.
- 75 2. The device claimed in claim 1 wherein said electrical insulation means is positioned at each end of an uninsulated electrical conductor annulus.
- 80 3. The device claimed in claim 1 wherein said electrical conductor annulus is further defined as including an electrically uninsulated portion and an electrically insulated portion extending within said electrical insulation means.
- 85 4. The device claimed in claim 1 wherein said electrical insulation means is more fully defined as polyethylene and said electrical conductor is formed of stainless steel braid.
- 90 5. A device for localized diathermy and simultaneous localized radiation therapy comprising: an annulus formed of an electrical conductor having a plurality of apertures extending radially through said electrical conductor annulus; electrical insulation means positioned adjacent and abutting said electrical conductor annulus.
- 95 at least one radioactive isotope positioned within said uninsulated electrical conductor annulus.
- 100 6. The device claimed in claim 5 wherein said electrical insulation means is positioned at each end of an insulated electrical annulus.
- 105 7. The device claimed in claim 5 wherein said electrical conductor annulus is further defined as including an electrically uninsulated portion and an electrically insulated portion extending within said electrical insulation means.
- 110 8. The device claimed in claim 5 wherein said electrical insulation means is more fully defined as polyethylene and said electrical conductor is formed of stainless steel braid.
9. The device claimed in claim 9 further including a sleeve positioned within said electrical conductor annulus for positioning said radioactive isotopes.
10. The device claimed in claim 9 further including a reduced diameter sleeve portion extending through said electrical insulation means.
- 115 11. A device for localised diathermy substantially as herein described with reference to and as illustrated by the accompanying drawings.

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